



The LimeLight<sup>TM</sup> projector, developed by Vivid Systems, Inc., is the first low-cost, light-weight, computer-screen projector. The portable unit, weighing just 25 lbs, projects computer-screen images onto a wall or screen from four to ten feet diagonally. Compatible with most personal computers and terminals, the LimeLight projector replicates the computer's image allowing real-time changes to be projected.



VIVID SYSTEMS INCORPORATED

FACT SHEET

- FOUNDED:** March 28, 1983 by Salvatore L. Suniga, president; Dennis Vance, vice-president engineering; and Grayson Gibbs, vice-president advanced systems.
- PRODUCT:** LimeLight<sup>TM</sup>, a computer projector that displays computer generated video information onto a four to ten foot screen. The system works with personal computers and terminals, and may be operated with more than one model at a time, or in tandem for computer conferencing. The LimeLight projector is portable (8 in. X 12 in. X 24 in., and 25 pounds) and is priced at \$3,950.
- FINANCING:** The company completed its second round of investment in May 1984 in support of large-scale manufacturing.
- SPACE:** Manufacturing and office facilities are located in Palo Alto, California.

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## VIVID SYSTEMS INC.

### BACKGROUNDER

#### Overview

Vivid Systems Incorporated of Palo Alto designed, developed and markets the LimeLight<sup>TM\*</sup> projector, a computer-screen projector that displays computer generated video information onto a four to ten foot screen, thus permitting simultaneous group viewing of the data generated by a single computer. The Vivid LimeLight projector offers superior price, size and weight to existing products on the market.

Vivid Systems was founded in March 1983, by managers experienced in computers, product development and marketing. The major first round investment in the firm came from Silicon Valley pioneer and venture capitalist Jack Melchor. In May 1984, Vivid completed its second round of investment, in support of large scale manufacturing.

\* Patent pending

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## The Market

The revolution wrought by the personal computer has been sweeping and nearly all-encompassing, reaching into almost every corner of daily life, from business planning, to home management to education. But the personal computer, for all of its power and flexibility, has an important limitation -- it is precisely what it is called, a personal computer.

Anyone who has ever gone into a computer store or attended a seminar to learn the operation of a personal computer knows precisely what this means. As the instructor operates the keyboard, the student must strain about, peering over a shoulder or around a head to see what is on the screen -- only to discover that the characters are now too far away to be decipherable.

This is hardly a promising situation. Try as they might, instructor and student will never find a seating arrangement that will give both of them acceptable access to the screen.

This problem becomes insurmountable in a group situation such as a business presentation or a conference, which is ironic, as the processing power and flexibility of the personal computer makes it potentially the greatest presentation aid ever invented.

Faced with this obvious hindrance to the application of personal computers to meeting and classroom situations, companies have searched for a solution. One possibility is to set up a network in which the student operates his own personal computer (or terminal) simultaneously. This, of course, is prohibitively expensive, particularly when one is talking about scores of users. It is also quite permanent: It is physically prohibitive to move a wired network of numerous computers from classroom to classroom.

There have been other more pragmatic attempts to overcome this apparent contradiction between personal computing and group viewing. Some educators and meeting organizers have replaced the computer's CRT with large television monitors. Others have aimed a television camera at the computer screen and presented the resulting blurry image; or used a home video projector, with similarly inadequate results.

Some speakers, notably those appearing before large conferences, have abandoned trying to use a computer entirely, instead resorting to copies of the screen images in the form of overhead projection foils or print-outs or photographic slides. But this only negates the inherent appeal of computers: their extraordinary adaptability to changing needs. The whole point of using a computer is that the operator can quickly modify data to answer any question -- impossible with a prepared set of print-outs or slides.

It has been obvious from the beginning that none of the compromise techniques work. Those that offer the 'real-time' capabilities of a personal computer are usually illegible, and those that feature sharp imagery are hopelessly static.

The only solution is to build a device that can take the computer's own image-producing system, accentuate and focus it, and then cast the resulting enlarged image on a screen or wall. But that is a lot more difficult than it sounds -- as evidenced by the ungainly and expensive models presently on the market. For example, the most common such projector on the market costs \$6,000 and weighs over 50 pounds. Hardly an economical solution. The heavy weight precludes portability -- a critical feature in a sales or teleconferencing application.

What is needed is a moderately priced projector that is light enough to be portable, yet still can connect with most CRTs and offer flawless clarity.

That product is the LimeLight computer projector.

### The Product

The LimeLight portable computer-screen projector is designed to fill the need for a low-priced, portable system that can enlarge computer-screen images onto a wall or projection screen. At 25 pounds, the LimeLight projector represents a design and engineering breakthrough. Despite its small size, the projector also projects a clearer image than any available computer imager on the market.

The LimeLight projector projects a monochrome green image from four feet to ten feet in diagonal. Clarity is more than 700 lines of resolution (equal to or better than most personal computers) and the image, unlike models from other manufacturers, can be focused at the center and in the corners. The multiple lens technology that makes this possible has additional features: The projected image can also be 'stretched' either horizontally or vertically without loss of sharpness, making the projection fine-tunable to any room or screen.

The LimeLight projector image can be projected onto curved or flat screens, blank walls and in front or rear projection. The image is also quite bright: 115-foot lamberts on a five foot diagonal, ten gain screen -- the equivalent of a high quality projection television.

A single LimeLight projector can be switched between personal computers for multi-user presentations. When used in tandem at geographically diverse locations, the projector can serve as the centerpiece of a computer conferencing environment.

Applications for the LimeLight projector include:

- Financial reporting and projections
- Group problem-solving sessions
- Training sessions
- Classrooms
- Trade show exhibits
- Large conferences and seminars
- Teleconferences

#### Market Summary

How big is this market? In 1984, according to the market research firm, Future Computing, the installed base of office personal computers will approach six million, growing to more than 21 million by 1988. Given only a limited market penetration, computer-screen projection equipment will still be an estimated \$25 million business this year, jumping to as much as \$350 million by 1988.



## VIVID SYSTEMS MANAGEMENT TEAM

SALVATORE L. SUNIGA

President

Salvatore Suniga has extensive experience in financial management, administrative and corporate operations. After earning his bachelor's degree in business science and his MBA from San Francisco State University, Suniga joined United Airlines, South San Francisco, as a reliability analyst for their maintenance base. He went on from there to become an applications planning specialist for United where he assisted with computer modeling for their inventory control systems. After five years with United, Suniga joined Tymshare Corporation, Santa Clara, CA, where he worked initially as an applications consultant and then as a salesman. After serving as a marketing representative for Chase Manhattan Bank, Suniga went to work for Infomedia Corporation where he served for four years as vice-president of marketing. Just prior to joining Vivid Systems, Suniga was vice-president of marketing and chief financial officer for CrystalVision, Inc.

DENNIS W. VANCE, PhD

Vice President Engineering

A co-founder of Vivid, Dennis Vance hails from Vertex Video Systems, of which he was founder and president. Vertex manufactures optical test media. Holding a doctorate in physics from the



University of Florida (1965), Dr. Vance has served as a staff scientist at Xerox Research Lab in Rochester, New York. From 1971 to 1977, Vance was principal scientist and manager of display technology at Xerox P.A.R.C., where he planned, supervised and conducted research into new display technologies. In 1977, Dr. Vance left Xerox to try his hand at entrepreneurship by founding Home Cinema, a five-store retail video equipment chain. In 1980, he was lured back to corporate life by Exxon Entreprises/EPID, where he served as senior device scientist in the design of flat-panel displays. He left to found Vertex Video. Two years later, Dr. Vance joined Vivid. Dr. Vance is a member of the American Physical Society and the Society for Information Displays.

#### GRAYSON GIBBS

Vice-President Advanced Systems

A co-founder of Vivid Systems, Grayson Gibbs' career includes a mix of corporate and entrepreneurial experience. After earning a master of science degree in communications at Brooklyn College, Gibbs worked in television network sales development at CBS, and as station manager for instructional television stations in American Samoa and San Francisco. In 1976, Gibbs became director of special projects for Communications by Design, coordinating a weekly live satellite medical television broadcast. Three years later, he became director of special projects at the University of Nevada at Reno, where he created the first permanent audio teleconferencing network in northern Nevada. Beginning in 1975, Gibbs created his own consulting firm, Grayson Gibbs and Associates, specializing in

satellite teleconferencing networks. Clients included the Public Broadcasting Service, the Catholic Church and NASA. In a two year project with Satellite Systems Development, Gibbs helped design satellite networks for the ministries of Health in Nigeria, Kuwait and Honduras.

WILLIAM L. MULERT

Vice-President Marketing

William Mulert's marketing experience extends across the entire data processing industry from large mainframe computers to small personal computers and almost everything in between. Mulert earned a degree in electrical engineering at Iowa State, after which he worked at U.S. Steel. In 1966, Mulert joined Hewlett-Packard Co. as a sales engineer for electronic instruments. Three years later he joined IBM in Palo Alto, California, as a sales representative, selling CALL/360 timesharing services. In 1971, he was the top IBM salesman for the market in the United States. This in turn led to a year as vice president of marketing and sales at a software firm, Interactive Applications Inc. In 1972, Mr. Mulert joined Tymshare Inc. in Cupertino, California. In his nine years with the firm, he rose from manager of product planning to New York sales manager to manager of market development for a \$50 million division. Mulert also served as director of marketing and sales for Mountain Computer, a personal computer peripheral products maker, prior to forming Mulert Associates Inc., his own sales and marketing consulting firm, in 1983.

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10/84



VIVID SYSTEMS INCORPORATED

Profile: Salvatore L. Suniga, president

The history of Silicon Valley is filled with stories of businessmen who have come up with an idea for a new company and then approached investors for financial backing. Sal Suniga's story is one of the rare instances where that process was reversed: because of his reputation, he was approached by a venture capitalist who suggested Suniga put his experience and ideas to work by starting his own company.

The result was Vivid Systems Incorporated of Palo Alto, a new manufacturer of computer projection systems. The venture capitalist who was willing to bet on Suniga's reputation was Peter Jennings, a personal computer pioneer (Visicorp) turned successful investor. What convinced Jennings that Suniga was a worthy talent, despite the fact that the latter had never been an entrepreneur, was Suniga's impressive track record as an executive able to drive small, struggling firms to success.

Salvatore Suniga, one of the few Silicon Valley executives of Mexican-American extraction, was born in Pittsburg, California, an industrial town across the Bay from San Francisco.

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He earned his bachelor's degree in business science and his MBA from San Francisco State University. Immediately after graduation he joined United Airlines at its South San Francisco Maintenance Base as a reliability analyst. He quickly progressed to serve as an applications planning specialist, assisting with computer modeling for United's inventory control system. He lasted "five years and one week -- long enough," Suniga says, "to show me why I don't like large organizations."

Suniga then joined Tymshare Corporation in Silicon Valley in 1973 and stayed four years, working initially as an applications consultant. "I just walked into Tymshare's Palo Alto office and announced that I wanted a job, but I didn't want to be a salesman." In 1975, Suniga did become a salesman, managing a \$500,000 territory he had created.

In 1977, a call from Interactive Data Corporation, a subsidiary of Chase Manhattan Bank, appealed to Suniga because of IDC's sophisticated software. So he jumped, and in the 15 months he was with this new firm, he closed 22 accounts as a marketing representative.

"But," says Suniga, "I still wanted to try my hand at a small company." And in January 1979 that chance finally appeared in Infomedia Corporation, a company pioneering in the concept of computer conferencing. If Suniga wanted a small company, this most certainly was it; with his arrival it became a three-man operation. He was named vice president of marketing and set to work creating that market. He was remarkably successful, turning a \$250,000-a-year research company into a \$1.5 million manufacturer in just two years, by closing 32 major domestic and



international accounts in the utility, petroleum, construction and financial industries. "The work also taught me the complex responsibilities involved in running even the smallest company," Suniga recalls.

In February 1982, Suniga joined his first true start-up company, CrystalVision Inc., as vice-president of marketing and chief financial officer. There he was responsible for all marketing and planning activities, as well as all administrative, financial and manufacturing programs -- truly wearing every executive hat in the company. As CFO he inherited some sizable financial obstacles to overcome. In doing so, he recalls "I learned what can go wrong in a start-up and how to move quickly under a lot of pressure. Though it was an experience I don't plan to repeat, the lessons learned were invaluable." The lesson was obviously learned in surmounting the problems, as he also helped raise \$1.5 million in venture capital for CrystalVision.

It was during this period that Suniga was approached by Jennings and the idea of Vivid Systems was set in motion. Only now, with the product introduced and production underway, can Suniga catch his breath and reflect:

"Starting a new company is more complicated than anyone who hasn't experienced it can imagine. It has little relation to life in a large corporation. There are no defined boundaries of responsibility, everyday you wear a different hat. You put to use every bit of experience you've gained over your entire business career.

"Most of all you have to have a goal for your company always in mind. My goal for Vivid is to build a company that creates products that enable people to share the remarkable power of the

personal computer, that makes the computer an extension of one's thoughts as they are communicated to other people. The LimeLight projector is our first step in that direction."

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# VIVID NEWS RELEASE

SYSTEMS INCORPORATED

FALL COMDEX BOOTH #M1332  
MGM GRAND HOTEL

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FOR IMMEDIATE RELEASE

DEALERS CAN SELL NEW MANAGEMENT TOOL

TO CORPORATE MARKET WITH VIVID COMPUTER PROJECTOR

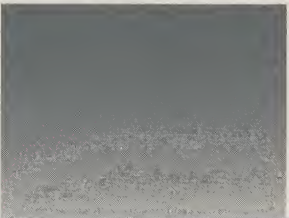
LAS VEGAS, Nev.--November 14, 1984--Interactive project management, a new corporate management tool used at such major companies as Arco and Masonite Corporation, is being demonstrated for the first time by Vivid Systems, Inc., at Fall COMDEX Booth M1332 in the MGM Grand Hotel.

"Projecting a real-time display from a personal computer to a large screen with the LimeLight computer projector will help revolutionize the usefulness of PC's for managers," said Sal Suniga, president of Vivid Systems, Inc.

"Professional managers spend most of their time in conference rooms with teams--that's why desktop PC's have not really penetrated corporate America yet. By solving the "over-the-shoulder" problem inherent in using a PC with a group of people, Vivid is opening up a new market," he said.

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"The LimeLight is ideal for any type of presentation, training or conference situation as well as project management and planning. As a result, in establishing our distribution network, we're convinced dealers will recognize the extent to which the LimeLight projector can open doors to the Fortune 1000 companies," Suniga added.

A lightweight, low-cost, user-friendly projector, the LimeLight takes the image from a personal computer's screen and reproduces it as a dynamic monochromatic image (green and black), on a wall or screen up to ten feet in size, for simultaneous viewing by large groups of people.

Weighing in at only 25 lbs., this portable unit connects to most personal computers and terminals by a standard video cable. The image is as sharp or sharper than that on the computer screen and can be enlarged, brightened and adjusted for contrast.

Up to four personal computers can be connected to a LimeLight projector in order that different CRT images can be viewed sequentially. The unit also allows the user to display the image from an off-site PC that forms part of a computer network, or access an image over the telephone using a modem link, thereby making it ideal for teleconferencing. The LimeLight retails at \$3,950



James Halcomb, one of America's top planning consultants, is at the COMDEX booth to demonstrate an example of interactive project management. He is showing how a PC's usefulness can be expanded from being an individual workstation to a management tool used in a group setting.

Halcomb, who is demonstrating this group application with a MacIntosh computer, MacProject and ThinkTank software and the LimeLight computer projector, is encouraging booth attendees to participate in developing strategies and schedules for a new product introduction.

Vivid Systems was founded in 1983 by three individuals with backgrounds in computers, product development and marketing. It is expected that computer projectors will represent up to a \$350 million market by 1988.

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